



Beam baseplate

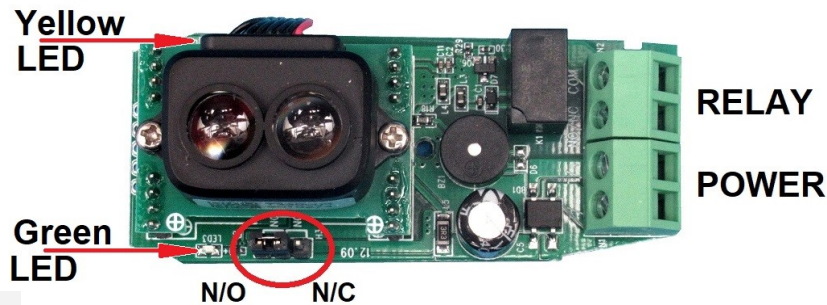
### 1. Description & Functions

This is a Light Ranging Application device using sonar like techniques. It consists of a high power emitter and detector. Laser infrared is a stimulated coherent light in a narrow beam. Short high power pulses gives the device it's exceptional range.

The output relay switches when the target detected is less than the threshold distance. The device threshold distance is set by learning, up to a maximum 8m. The fail secure output can be set N/O or N/C. The Green LED is power. The yellow LED is detect. Applications should be restricted to vehicle detection, or supplementary safety on shorter ranges.

### 2. Applications

Applications are for the detection of foreign objects in a known and controlled free space, like a driveway. In automation terms, applications are either to initiate or prevent a movement; activation or safety. There are also security applications for intruder detection which are for alarm notification only.



### 3. Position and limitations

The device should be mounted for a horizontal beam. Coherent Infrared beams work on objects with reflectivity of 10% to 90%. Pure black objects (<10%) absorb light more. Highly polished surfaces (>90%) reflect more.

Vertical or diagonal beams need to avoid the possibility of targeting (reflective) water puddles. The device is rainproof for horizontal mounting so consider additional sealing or a rain hood cover may be needed.

The lens needs to be kept clean. Heavy rain and fog may impair detection on longer range applications. Keep detection for prevention of movement (safety) applications to within 4m range.

### 4. Installation & wiring

The PCB has only one orientation in the housing, forward facing. There is no angular adjustment, so be sure the surface is truly perpendicular to the beam. If the site is an outside wall you will need to fix the rain hood to the wall first, then the beam base plate. The device takes a four core cable through a grommet in the bottom.

There are four terminals on the PCB; a power pair and a contact pair. A jumper on the PCB edges selects N/O or N/C contacts. DC power can be wired to terminals either way around. The relay contacts are volt free. We recommend using the standard colour code red & black for power, blue & yellow safety or blue & green to open

FA-T80 specification	
<b>Power</b>	10-30Vdc 10-24Vac Iq = 80mA Ipk 150mA
<b>Op. Cond'ns</b>	-10° C to 60° C
<b>Dimensions</b>	37 x 36 x 108 mm
<b>Response time</b>	100ms ≤ Tr
<b>Range &amp; angle</b>	0.3m - 8m, beam splay ±1°
<b>Contact output</b>	1A @ 30Vdc volt free N/O or N/C

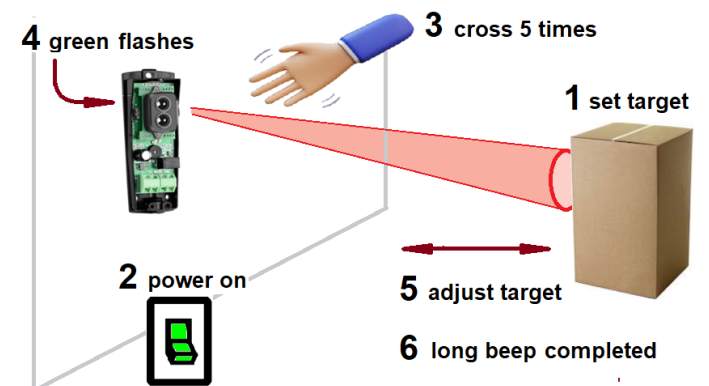
### 5. Range threshold setting

On power up, green and yellow LEDs flash 3 times, then there is a beep. If left, the device begins normal operation after 10 secs.

To set threshold range .....

1. Set the target in the line of the beam
2. Power up, and wait for the beep. You now have 10secs
3. Cross the beam 5 times at 0.5m from the device.
4. There are 5 beeps, then the green light flashes rapidly
5. Adjust the target if necessary.
6. When the long beep sounds, the threshold is set

You are now in normal operation.



## 6. Activation applications

Post mounted beams across a drive will respond to any object. Adjust the height and angle to be more selective to a vehicle as opposed to a child. Range can then be adjusted to fall short of pedestrian areas.

A driveway alarm has device directed along the drive, warning of cars or people entering. Set the threshold to end at the perimeter.

## 7. Barrier application

The device can be fixed to the barrier arm, or to the barrier cabinet. It is ideal for arms up to 4m without a tip support. Cabinet mounting is safer, but only applies to the height the device is set at.

Fixed to an arm replaces a safety edge, but consider the response time of 100ms and adjust the angle to allow for distance covered in 100ms.

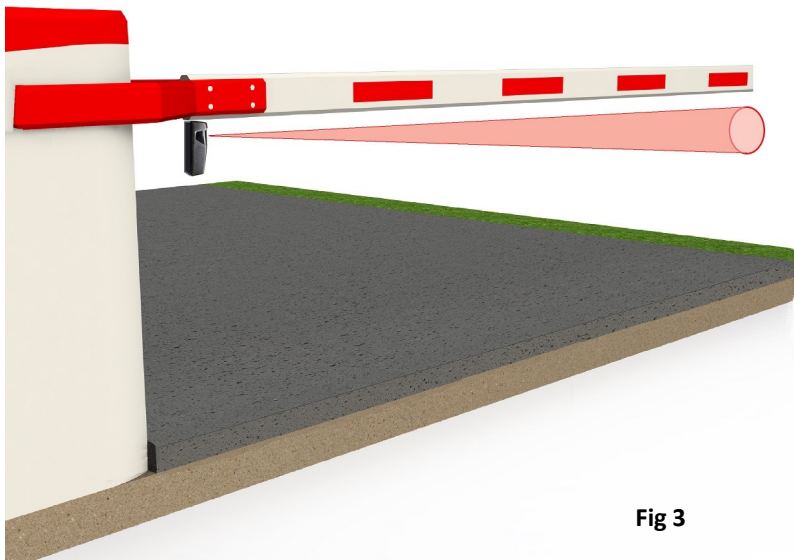


Fig 3

## 7. On the gate application

Devices can be fixed to the back of a gate to watch for obstacles in the path of the gate while opening (fig 1). Note the first gate to open (right) can be set to over-reach the length of the gate by a foot. The second leaf needs to be set at the same length as the gate leaf, or it will see the first leaf begin to open.

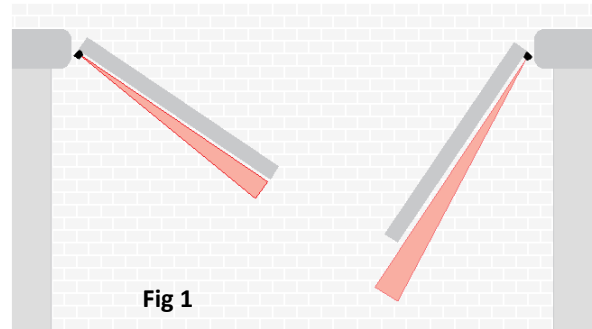


Fig 1



Device fixed to a gate

## 8. Fixed device application

Fixed devices are used to protect crush zones behind a gate (left leaf). They also protect against entrapment. The contact is set to N/C and the function to pause the gate during opening. As a safety device we recommend thresholds up to 4m because of over sensitivity in bad weather. Fig 2 also shows a beam on the side wall. It demonstrates a ring of beams element without the need for a post that can obstruct traffic or parking.

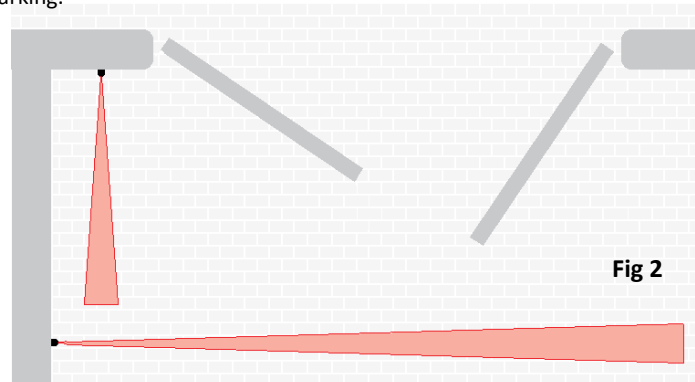


Fig 2

